TIER 2/TIER 3 FARMS WITH HIGH NITRATE LOADING RISK
TOTAL NITROGEN APPLIED REPORT - RANCH/RISK UNIT and FIELD/BLOCK INSTRUCTIONS

December 10, 2015 Version

GENERAL INFORMATION ABOUT TOTAL NITROGEN APPLIED REQUIREMENT

Tier 2 and Tier 3 Ranches with a HIGH nitrogen loading risk determination are required to have records of the Total Amount of Nitrogen Annually Applied from September 1st to August 31st, and to report Total Nitrogen Applied (TNA) annually by October 1st.

Records Required to Report TNA:

1. Total nitrogen applied in pounds per crop-acre (lbs/crop-acre) in fertilizers and amendments and all other materials/products containing nitrogen in any form or concentration, including but not limited to, organic and inorganic fertilizers, slow release products, compost, compost teas, manure, and extracts;
2. Average nitrogen concentration in irrigation water applied during the annual reporting period, and the calculated or estimated nitrogen load in lbs/acre (the acres correspond to the ranch, risk unit, block or field, depending on the acres reporting TNA);
3. The total N present in the soil (lbs/crop-acre) that is available for crop uptake. The total N present in the soil must be measured at least once per annual reporting period, for each field within the ranch or risk unit (ranch subdivisions).

How to Report Crop Information:

A1. For crops grown for less than 12 months and harvested during the reporting period (reporting period is September 1st to August 31st) report the TNA to the entire crop throughout its growing cycle by the October 1st dateline.

A2. For crops grown for less than 12 months that are planted but not harvested during the current reporting period, report the TNA to the entire crop throughout its growing cycle by the October 1st that follows the final harvest (kill-date); that is, in the following reporting October 1st dateline;

B. For crops grown for more than 12 months but less than 2 years, such as strawberries grown for longer than 1 year, and that have not yet been harvested for the final time (kill-date), select the "Crop, Not Final Harvest" option (e.g. Strawberry, Not Final Harvest) from the specific crop dropdown menu to indicate that the crop is still in the ground and will be finally harvested before the end of the following reporting period. On the current reporting form, report the nitrogen applied to the crop so far. Resubmit the reporting form after the crop is finally harvested (kill-date), and provide the nitrogen to the crop throughout its full growing cycle;

C. For crops that are long-term and grown for more than 24 months, such as blueberries, report TNA from September 1st to August 31st on an annual basis by October 1st.

1: For crops that are considered baby crops, such as baby lettuce, select the "crop, baby" option (e.g. Lettuce, Baby) in the specific crop dropdown menu.

2: For crops grown and that are NOT listed in the specific crop drop down menu, contact Water Board staff immediately at AgNOI@waterboards.ca.gov to add the specific crop to the list.

How to Report Acreage Information:

A. For acreage that previously reported TNA in risk units, blocks, or fields, and would like to now report TNA for the entire ranch, report current TNA on a single reporting form specifying the corresponding reporting acres and Assessor Parcel Numbers (APNs).

B. For acreage that previously reported TNA for the entire ranch and would like to now report TNA in different or smaller risk units, fields, or blocks, a unique form should be used for each distinct risk unit, field, or block. Specify the corresponding reporting acres and Assessor Parcel Numbers (APNs).

How to Report Accurate Nitrate Loading Risk Determination(s):

C. Updates made to the ranch eNOI and/or the annual compliance form AFTER August 31st that change the nitrate loading risk determination(s), will be considered part of the October 1st annual update, and determine the ranch nitrate loading risk for the following reporting year.

Reporting Period	The default dates display the current reporting period. Growers may modify the reporting period only under special circumstances, such as if the operator has not been farming the ranch during the entire 12-month reporting period. Changes in the reporting period require staff approval. Therefore, if the reporting period is modified, please provide detailed information explaining the reason/s why the change was necessary in the Explanations & Comments section on page 2 of the form. Water Board staff will review the explanation provided and contact you. The lack of records or required information will not be accepted as a justification to modify the reporting period. Note: if the reporting period is modified, both the average nitrate concentration of the irrigation water and the nitrogen applied with irrigation water (as well as the estimated volume) must correspond to the months that are now modified as part of the new reporting period.
SECTION I: GENERAL RANCH INFORMATION	
AW#	Provide the AW identification number that is assigned to your operation.
Ranch Global ID	Provide the ranch global identification number that is assigned to the ranch. The ranch global ID can be found on the upper right corner of the specific ranch eNOI in GeoTracker. Example, Global ID: AGL020013962.
Ranch, Risk Unit, Block or Field Name	State the specific ranch, risk unit, block, or field name, as identified in GeoTracker, for which you are reporting total nitrogen applied.
Physical Acres Reporting	Report the total acreage for which you are reporting total nitrogen applied. The acres could represent the entire ranch, individual risk units, block, or field. Modify the reporting acreage to include only those acres that were farmed during the reporting period, if not all acres were under crop production. You may modify the reporting acreage specifically in cases where only part of the required acreage has been farmed and where the rest of the acres were in fallow, without receiving any type of irrigation and no nitrogen applications. If, on the other hand, part of the acreage was under cover crops, then the reporting acreage must include the acres with cover crops, even if no nitrogen applications were made to the cover crops. Cover crops should be selected in the Specific Crops Grown dropdown menu, and the cover crop acreage should be provided.
County	Select the county or counties where the "physical acres reporting" are located. Note: If acreages are located in more than one county, report all other counties and APNs on the second page of the form.

<table>
<tr><td>APN(s)
Assessor Parcel Numbers</td><td>Report all assessor parcel numbers (APNs) where the reporting acres (physical-acres) are located.
Notes:
1. Additional APN boxes are located on the second page of the form,
2. If more than 20 APNs are reported, include a list of all APNs when emailing the Total Nitrogen Applied form to Water Board staff,
3. Enter all the digits of one entire APN in each of the boxes provided,
4. APN numbers are formatted by the specific counties. Make sure you are reporting the APNs correctly for your county/counties as follows:
<table><tr><td>Ventura</td><td>XXX-X-XXX-XXX</td><td>10 digits</td></tr><tr><td>Santa Barbara</td><td>XXX-XXX-XXX</td><td>9 digits</td></tr><tr><td>San Luis Obispo</td><td>0XX-XXX-XXX</td><td>9 digits</td></tr><tr><td>San Mateo</td><td>XXX-XXX-XXX</td><td>9 digits</td></tr><tr><td>Monterey</td><td>XXX-XXX-XXX or
XXX-XXX-XXX-000</td><td>9 or 12 digits</td></tr><tr><td>San Benito</td><td>0XX-XXX-XXX or
0XX-XXX-XXX-000</td><td>9 or 12 digits</td></tr><tr><td>Santa Cruz</td><td>XXX-XXX-XX</td><td>8 digits</td></tr><tr><td>Santa Clara</td><td>XXX-XX-XXX</td><td>8 digits</td></tr></table></td></tr>
<tr><td colspan="2">SECTION II: NITROGEN APPLIED WITH IRRIGATION WATER</td></tr>
<tr><td>Average Nitrate Concentration in <u>Irrigation Water</u>
(mg/L)</td><td>Report the average nitrate concentration in the irrigation water used on this ranch, risk unit, block, or field. This number should include the amount of nitrate naturally dissolved in the irrigation water as it is pumped out of the ground, or delivered to your ranch, block or field by the irrigation district, water agency, etc. This number should <u>not</u> include liquid fertilizers applied during fertigation. To report the average nitrate concentration you must obtain a laboratory analysis or utilize a portable measuring device that results in a discrete numeric result for nitrate concentration from the <u>primary source of irrigation water applied</u> to the ranch/risk unit, during the reporting period.

For more accurate reporting, operators may also measure the nitrate concentration from the <u>other sources of irrigation water applied</u>, besides the primary source of irrigation water, to the ranch/risk unit, during the reporting period. In the case that more than one well is used to irrigate, each well’s average annual concentration and volume applied could be measured to obtain the weighted averages. Therefore, if more than one irrigation source is used, the weighted averages could be reported instead of information from only the primary source of irrigation water.

Note 1: A discrete measurement is required for the primary source of irrigation water applied. However, any methodology, such as nitrate quick test, can be used to measure the concentration of all other sources of irrigation water applied, e.g. backup wells.
Note 2: mg/L = ppm</td></tr>
<tr><td>Units of Nitrate Concentration (select one)</td><td>Select the proper units you are using to report the irrigation water nitrate concentration. Nitrate as Nitrate (commonly shown as NO3 in laboratory reports) or Nitrate as Nitrogen (commonly shown as N, NO3-N, or NO3NO2N in laboratory reports).</td></tr>
<tr><td>Estimated Total <u>Volume of Irrigation Water</u></td><td>This field is not required, but is used to auto-calculate the next box titled "Total Nitrogen Applied with Irrigation Water." Enter the total gallons applied to the entire</td></tr>
</table>

Applied to Entire Reporting Acres During Reporting Period *(gallons or acre-feet using link beside the estimated volume value cell)*	reporting acreage during the September 1st to August 31st reporting period (or throughout an approved modified reporting period, if applicable). To convert the total volume applied if calculated as acre-feet or acre-inches to gallons, click on the blue link in the form to access a simple excel file developed to convert acre-feet or acre-inches to total gallons applied. The excel file may also be found on the ILRP website, http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources, and is titled "**convert_to_gallons**". The value in this field can be erased after the Nitrogen Applied with Irrigation Water box is auto-calculated. *The Total Volume of Irrigation Water Applied should include any water applied for leaching and all recycled water. Note: rain water should not be included.*
Total Nitrogen Applied with Irrigation Water *(lbs/acre)*	Calculate and report the total nitrogen applied with irrigation water or auto-calculate based on previously entered fields. The information must be reported as the total pounds of nitrogen applied to each acre of the ranch, risk unit, or block/field. To report the amount of nitrogen applied with irrigation water (to all the crops grown on the ranch or risk unit during the reporting period), the following information must be known: 1. The average nitrate concentration in the primary source of irrigation water, or the weighted average of nitrate concentration in the irrigation water applied, if more than one well is used for irrigation. 2. Total volume of irrigation water applied (to all the crops grown on the ranch, risk unit or block/field during the reporting period). To calculate the total amount of nitrogen applied with irrigation water in lbs/acre, in cases where more than one water source is used to irrigate crops in the ranch/risk unit or block/field, the volume of water applied from each source should be accurately measured. The Nitrogen Applied with Irrigation Water can be manually calculated by following the steps outlined in the example described on pages 9 and 10. To auto-calculate, enter the total volume of irrigation water applied, in gallons (previous box) to the entire ranch, risk unit or block/field (reporting acres). Note: This value corresponds to the pounds of nitrogen applied to each acre of the ranch/risk unit or block/field (physical-acre).
SECTION III: NITROGEN APPLIED WITH COMPOST AND AMENDMENTS *(Not to a Specific Crop)*	
Physical Acres Receiving Compost & Amendments	Report the total number of ranch, risk unit, or block/field acres (physical-acres) where nitrogen applications from compost and amendments were made.
Nitrogen Applied In Compost & Amendments *(TOTAL lbs)*	Report in this section the total number of pounds of nitrogen applied from compost, amendments, and all other nitrogen containing materials (such as compost teas, humic acids, bacterial extracts, soil enhancers, but NOT including fertilizers, which must be reported in Section IV) if the applications were: 1. Applied to improve the soil physical and/or chemical properties (increase organic matter, improve structure or moisture retention), and usually applied when there are no crops growing on the ground, or 2. Intended for multiple crops, so the nitrogen would be distributed to many crops and the nitrogen is not already distributed among all the crops and reported in section IV. Note 1: Also report in this section all other applications of nitrogen that are not reported in section IV. Note 2: In the case where multiple applications are made during the year, sum the applications and report the total applied nitrogen in pounds. Note 3: Make sure the value reported from the compost and amendment applications is converted from pounds or tons of the gross material to pounds of nitrogen.

	Example 1: if you apply 20 pounds of N to 10 physical acres, then 30 pounds of N to a different 5 physical acres of the ranch, and finally 30 more pounds of N to another 10 physical acres; report 80 pounds of N to a total of 25 acres. Example 2: if you apply 20 pounds of N to 10 physical acres, then 30 pounds of N to those same 10 physical acres, and finally 30 more pounds to the same 10 physical acres; report 80 pounds of N to 10 acres.
SECTION IV: NITROGEN APPLIED WITH FERTILIZERS & OTHER MATERIALS AND NITROGEN PRESENT IN SOIL	
Specific Crop(s) Grown and Harvested During Reporting Period (Select from List)	Select specific crop/s from the drop-down menu or the attached list on page 11. Note: See picture-examples below to determine under what circumstances a specific crop can be reported as mixed greens or spring mix. Report information for each specific crop grown on the ranch, risk unit or block/field during the reporting period. For example, all the broccoli crops grown and harvested during the reporting period should be reported on one line. Growers also have the option to report information for a specific crop separately (more than one line) if the amounts of water or fertilizer inputs differ. For example, water and fertilizer inputs might be different for lettuce crops grown and harvested in the winter versus the summer. In this case, the grower might report information for lettuce crops on two reporting lines. Different specific crops can be aggregated and reported on one line only if: these crops were intermingled with individual plants of different specific crop growing next to each other in the same row on the same field at the same time, and receiving the same amount of water and fertilizer. For clear examples, refer to the pictures below. Growers with strawberry crops have the option to choose the option “Strawberry (Not Final Harvest)” if the crop is still on the ground and receiving nitrogen inputs at the time of the reporting due date, but will be finally harvested (kill-date) within the next reporting period. In such case, by October 1st submit the TNA form including the N inputs applied to the strawberry up to the time of submittal, and re-submit the form when the crop is finally harvested (kill-date) with updated information of the TNA to the strawberry crop during the entire growing season. The re-submitted form should only include the updated TNA applied to the strawberry and not any other crop harvested after August 31st.
	This example can be reported as “spring mix” or “mixed greens” if it represents a mix of different specific crops growing together such as radicchio, escarole, and arugula; are intermingled, grown on the same row and field, and at the same time and receiving the same amount of water and fertilizer.
	This is an example of different varieties of lettuce that are grown together, next to each other at the same time in the same row. This should be reported on a single line as “lettuce” or “lettuce, mixed”.

	This is an example of alternating rows of different crops. If the crops are different varieties of the same specific crop, such as red-leaf lettuce, green-leaf lettuce, butter-head lettuce, etc., these can be aggregated together and reported as "lettuce" or "lettuce, mixed" on one reporting line on the form. If the crops are different crops in the alternating rows, such as radicchio, arugula, escarole, lettuce, etc., each of these must be reported on a separate line on the form.
Total Crop Acres	Report the crop-acres in each row for each specific crop reported in Section IV. If a specific crop is grown and harvested more than one time during the annual reporting period, the total crop acres of that crop equals the sum of the acres planted of that crop. Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres, a second crop with 10 acres of broccoli, and then a third crop with head lettuce on 10 acres, they would report 20 acres head lettuce and 10 acres broccoli. Therefore, each individual Total Crop Acres box on the form can be the same, more, or less than the total acreage of the whole ranch, risk unit or block/field.
Nitrogen Present in <u>Soil</u> *(lbs/acre)*	Report the nitrogen present in the soil. This information must be reported as the total pounds of soil nitrogen present on each acre of the specific crop. The content of nitrogen in the soil must be measured at least once per annual reporting period for each field within the ranch or risk unit, if TNA is reported for the entire ranch or risk unit. If TNA is reported by block or field, the content of nitrogen in the soil must be measured at least once per annual reporting period for each management block or field. The goal is to measure the content of nitrogen present that is available in the soil for the subsequent crop uptake. • To meet the requirement to record total nitrogen in the soil, growers may either take a soil sample for laboratory analysis, use the nitrate quick test, or use an alternative method to evaluate nitrogen content in soil, prior to planting, prior to seeding the field, prior to pre-sidedressing, or when appropriate to determine nitrogen available in the soil for the following crop. • Report the content of available nitrogen present in the soil in lbs/acre. For the purpose of measuring nitrogen content in the soil, in those cases where many small blocks exist in the ranch, the grower has the option to group the blocks into a large management unit to comply with the soil measurement requirement. • The method chosen to measure nitrogen content, the forms of nitrogen to measure (nitrate, urea, ammonia, all), and the effective rooting depth, should be decided when samples are taken. Unit conversions also apply: nitrogen in ppm (parts per million) in the effective root-zone must be converted to pounds of nitrogen per acre. • Reporting of available soil N content depends on the approach used to collect the samples. If multiple soil-samples are collected from different parts of the ranch, risk unit or block/field, then are mixed into a composite sample to measure available N in the soil of the whole ranch, risk unit or block/field, resulting in only one result from the lab, then: report this amount on the line corresponding to each one of the crop(s) where fertilizer applications will be modified based on N present in soil. If samples are gathered to determine nitrogen availability by specific crop(s), field(s), or soil type(s), then report the average soil nitrogen content from the samples under the subsequent crop(s). • Some crops may not have a soil nitrogen content to be reported on this form because it was not the proper time to measure it. In these cases, the soil nitrogen content cell on the form should be left blank. • Growers must maintain information of the amount(s) of nitrogen content in the soil, the date(s) of measurement, along with a justification for the timing of the

	measurements in the farm plan. • Refer to conversions on pages 10 and 11 of the instructions. Notes on Soil Nitrogen Measurement - The proper timing to measure the nitrogen content in the soil depends on the crop growing cycles and fertilizer management. Measure nitrogen content in the soil at the time of the year when soil nitrogen content is high and must be accounted as a source of nitrogen for the following crop and prior to or at the time when the crop fertilizer application decisions are made. It would be incorrect to measure nitrogen in the soil after the rainy season, when values are low, or at a time when no fertilizer application decisions are made. In the Salinas Valley, with multiple crop rotations, the appropriate time is between the first and second crops or in the spring. For strawberry crops the appropriate measurement may be prior to slow release fertilizer applications. Consult with your local crop advisor to determine the appropriate time to measure soil nitrogen content in a particular situation. Note: This value corresponds to the pounds of nitrogen present on each acre of the crop (crop-acre).
Nitrogen Applied in Fertilizers and Other Materials *(lbs/acre)*	Report the total nitrogen applied in fertilizers, amendments (if not reported in Section III above), and all other materials/products containing nitrogen, to each specific crop(s) harvested during the reporting period. This section includes composts, manures and any other N-containing organic materials that were accounted for as a nitrogen input to the specific crop and not reported in Section III. This information must be reported as the total pounds of nitrogen applied to a crop-acre of a specific crop grown on the ranch, risk unit or block/field that was finally harvested (kill-date) during the reporting period. Note: in the case of multiple crop rotations of the same specific crop, the total nitrogen applied in pounds/crop-acre is the average applied on all the rotations and on all the acres. You can click on the blue link in the Section IV header on the form to access a simple excel file developed to calculate the value to report in the case of multiple plantings and harvests of a specific crop on different acres. The file can also be found at the ILRP website and it titled "**N_from_fertilizers**", http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres and applies nitrogen at 200 pounds/crop-acre, a second crop of lettuce on 50 acres and applies nitrogen at 400 pounds/crop-acre, and then a third crop of lettuce on 100 acres and applies nitrogen at 300 pounds/crop-acre, they would then calculate the total applied on all acres as follows: 200 pounds/crop-acre x 10 crop-acres + 400 pounds/crop-acre x 50 crop-acres + 300 pounds/crop-acre x 100 crop-acres = 2,000 + 20,000 + 30,000 pounds. Then divide this total by all the crop-acres (160 crop-acres). This is 52,000 pounds divided by 160 crop-acres. The final number to report is 325 pounds/crop-acre in the Nitrogen Applied in Fertilizers and Other Materials box in Section IV of the form. For long-term crops, report the total amount of nitrogen applied during the 12 months reporting period (note: see the first page of these instructions, letter C under "How to Report Crop Information"). To calculate the amount of N applied with fertilizers, convert the fertilizer N-P-K % to pounds of nitrogen per acre by multiplying the percent nitrogen content in the fertilizer product by the total amount of fertilizer applied per acre. Report the nitrogen applied with fertilizers containing nitrogen including urea, ammonia, ammonium,

	nitrate, and all other nitrogen containing materials/products. Liquid fertilizers and other materials applied through the irrigation as fertigation should be accounted for in the section. Note: This value corresponds to the pounds of nitrogen applied to each crop-acre.
O / C	Specify if the crop was certified organic (O), or conventionally (C) grown.
No Yield / Research *(NY or R)*	Report "NY" if the crop was not grown to full term, did not produce any yield, but received nitrogen inputs and is no longer being grown (e.g. the crop was "disked in"). Report "R" if the crop is grown as part of a research trial or study and "not to maximize yields." NOTE: Crops that received nitrogen applications but were not grown to full term (harvest) must also be reported.
ADDITIONAL CROPS AND COUNTIES - CONTINUED FROM SECTION I AND IV	
Specific Crop(s) Grown and Harvested During Reporting Period	Report all crops grown during the reporting period and all other required information.
County	Report all additional counties where the reported acres are located.
APN(s) Assessor Parcel Numbers	Report all additional APNs where the reported acres are located.
SECTION V: BASIS FOR THE AMOUNT OF TOTAL NITROGEN THAT WAS APPLIED	
Identify the basis for the amount of total nitrogen applied. Report the source of the information you used to guide you in your fertilizer application decisions. This type of information refers to the known values of the amount of nitrogen taken up and/ or needed by the crop(s) to grow and produce a desired yield.	
SECTION VI: EXPLANATIONS AND COMMENTS	
Other comments/notes	Provide a brief explanation in this box if the information on this form does not represent the entire 12-month reporting period, if the reporting acreage is different than the required (high risk) acreage in annual compliance form (this applies specifically to ranches that have fallowed acres), or if any other section in the form is incomplete.
SECTION VII: TRADE SECRETS	
Does this form contain information related to trade secrets or secret processes?	Respond YES or NO to the question regarding trade secrets. *If YES, include an attachment that identifies the specific section(s) in this Total Nitrogen Applied form where proprietary information is contained and provide detailed and specific justification. Note that checking YES to the question above and providing detailed and specific justification does not guarantee the information will not be disclosed; Regional Board staff must review the claim of proprietary information and justification and make a determination as to whether the information is proprietary and can be withheld from disclosure in a Public Records Act request.*
SECTION VIII: CERTIFICATION	
This form must be reviewed and certified by the Operator/Responsible Party listed in the eNOI.	
Water Code Section 13267	Review the declaration stating that to the best of your knowledge and belief, under penalty of perjury, that the information provided is true, accurate, and complete.
Indicate that you have read the terms	Select the box to indicate that you have read and accept the above terms.
Operator/Responsible Party and Preparer	Provide the name of the operator/responsible party and the preparer of the report, the preparer title, the preparer contact information, and the date prepared. The

Information	preparer and the operator/responsible party, should be knowledgeable and understand the ranch/risk unit specifics regarding the total nitrogen applied and present in the soil for the selected reporting period. Both the preparer and the operator/responsible party should be available to respond to questions from Water Board staff. The operator/responsible party, as listed on the operation's eNOI, must review the report prior to submittal.

CALCULATIONS AND CONVERSIONS	
Estimate volume of water applied per ranch-acre	Section-II of the form provides an auto-calculation to calculate the total nitrogen applied with irrigation water. In order to use the auto-calculation, you will need to first complete all of Section-I, then begin to complete Section-II working from left-to-right. If you want to calculate the total nitrogen applied with irrigation water yourself and not use the auto-calculation feature, use the following instructions. First, you need to convert your estimated volume of water used from gallons to acre-feet, by doing the following: 1st: Estimate the total gallons applied to the entire ranch, risk unit or block/field during the reporting period. 2nd. Calculate the acre-feet applied per ranch, risk unit or block/field-acre. Example : Ranch = 10 acres Gallons applied = 5,000,000 -Convert gallons to acre-feet using the following formula: Gallons applied ÷ 325,851 Example use the numbers above: 5,000,000 ÷ 352,851 = 14.17 acre-feet of water applied to entire ranch -Now, divide total acre-feet (from above) by the ranch reporting acres (from Section-I of the form) 14.17 acre-feet ÷ 10 acres = 1.41 acre-feet per ranch-acre Continued below.
Calculate the Pounds of Nitrogen applied with the irrigation water	To determine pounds of nitrogen applied with the irrigation water (required in Section II of the form) you will need the nitrate concentration of your irrigation water and the total volume of water used (in acre-feet from above calculation). The basic formula is: = Nitrate concentration in water x Total volume water applied x conversion factor The conversion factor to use depends on the units the lab used to report nitrate concentration. They typically use either Nitrate-Nitrogen (NO3-N) or Nitrate-Nitrate (NO3-NO3) For nitrate-nitrogen (NO3-N) use the following formula:

	Lbs N applied = NO3-N concentration x ac-ft water used x 2.72 For nitrate-nitrate (NO3-NO3) use this formula: Lbs N applied = NO3-NO3 concentration x ac-ft water used x 0.62 Example, following from above: Total volume of water = 1.41 acre-feet per ranch-acre Average nitrate concentration = 20 mg/l as NO3 Conversion factor = 0.62 Calculation: 1.41 feet/acre x 20 mg/l x 0.62 = 17.5 lbs. N/acre Report the result in the far right box in Section-II of the form.
Conversion 1 Fertilizer grade from Pounds of fertilizer applied to Pounds of Nitrogen applied.	Dry fertilizer and its active ingredients are expressed as a weight per area. For this type of fertilizer, the calculations are fairly straightforward. For example, 100 pounds of a 10-20-30 fertilizer-grade material contains 10 pounds of active ingredients nitrogen (N), 20 pounds of phosphorus (P2O5), and 30 pounds potassium (K2O), equaling 60 pounds total of active ingredients, while the remaining 40 pounds consist of inactive materials. Example: Pounds of fertilizer applied per acre = 50 lbs. (Fertilizer grade) = 10-20-30. Percent Nitrogen content = 10/100 = 10% = 0.1 Lbs. of N applied = 50 lbs. fertilizer x 0.1 nitrogen = 5 Lbs. N Liquid fertilizer. The density of the liquid fertilizer is a key detail because it is impossible to know the weight of a liquid fertilizer before the density is known. Typically, the net volume and net weight are available on the liquid fertilizer label. The liquid density can be calculated based on these values. For a few more examples visit http://edis.ifas.ufl.edu/hs1200
Conversion 2 Interconverting Nitrate as Nitrate (Nitrate-NO3) and Nitrate as Nitrogen (Nitrate-N)	To convert Nitrate-NO3 (mg/L) to Nitrate-N (mg/L): Nitrate-NO3 (mg/L) x 0.2259 = Nitrate-N (mg/L) For example, to convert 45 mg/L NO3-NO3 to NO3-N: 0.2259 x 45 mg/L NO3-NO3 = 10.2 mg/L NO3-N And to convert Nitrate-N (mg/L) to Nitrate-NO3 (mg/L): Nitrate-NO3 (mg/L) = 4.4268 x Nitrate-N (mg/L) For example, to convert 10 mg/L NO3-N to NO3-NO3: 4.4268 x 10 mg/L NO3-N = 44.3 mg/L NO3-NO3 Note: Some laboratories might have provided the nitrogen concentration in the irrigation water as Nitrate + Nitrite as Nitrogen (NO3NO2-N). In these cases, the conversions that apply to the concentrations expressed as NO3-N (Nitrate as Nitrogen) apply.
Conversion 3 Soil analysis conversion from Soil	N (lbs/acre) = Nitrate-N (NO3-N) concentration (ppm) x 2 x soil sample thickness (in.) ÷ 6 in.

Nitrogen content in parts per million (ppm) to Pounds of Nitrogen present in soil per acre (lbs/acre).	(Assuming 2 million pounds of dry soil in upper 6 in/acre) Example: Depth NO3-N (nitrate expressed as N) is 0 - 6 inch is 8 ppm 6 - 24 inch is 4 ppm Then: Lbs N in 0 - 6 inch soil depth = 8 ppm x 2 x 6 in ÷ 6 in = **16 lbs. N/acre** Lbs N in 6 - 24 inch soil depth = 4 ppm x 2 x 18 in ÷ 6 in = **24 lbs. N/acre** Lbs N total in 0 - 24 inch profile = 16 lbs + 24 lbs = **40 lbs. N/acre** For conversions that apply when using the Nitrate quick test to measure nitrogen content in the soil, review the supplemental sheets with calculations.

LIST OF SPECIFIC CROPS IN DROPDOWN MENU			
Alfalfa	Chicory	Lettuce, Baby	Peppers, Bell (Final Harvest)
Anise	Chile	Lettuce, Butter	Peppers, Bell (Not Final Harvest)
Apples	Chinese Greens (A Choy)	Lettuce, Carton	Peppers, Chili
Artichoke	Chinese Greens (Bok Choy)	Lettuce, Green Oak	Pimiento
Artichoke Seed	Chinese Greens (Bok Choy	Lettuce, Head	Pineapple
Arugula	Baby)	Lettuce, Heirloom	Potato
Arugula Baby	Chinese Greens (Bun Choy)	Lettuce, Iceberg	Pumpkin
Arugula Wild	Chinese Greens (Gai Choy)	Lettuce, Leaf	Radicchio
Asparagus	Chinese Greens (Gai Lan)	Lettuce, Lola Rosa	Radish
Beans	Chinese Greens (On Choy)	Lettuce, Mixed	Rapini
Beans Dry	Chinese Greens (Tong Ho)	Lettuce, Red Leaf	Raspberry
Beans Lima	Chives	Lettuce, Red Leaf Mix	Rosemary
Beans Seed	Cilantro	Lettuce, Red Oak	Ryegrass, Winter
Beets	Collard Greens	Lettuce, Red Romaine	Safflower
Blackberry	Corn	Lettuce, Romaine	Seed Crops
Blueberry	Corn, Sweet	Lettuce, Romaine Hearts	Shallots
Bok Choy	Cover Crop, Legume	Lettuce, Tango	Sorrel
Bok Choy Baby	Cover Crop, Non-Legume	Mache	Spinach
Borage	Cress	Mango	Spinach, Baby
Broccolette	Cucumber	Marjoram	Spinach, Clip
Broccoli	Dandelion Greens	Melon	Spring Mix
Broccoli, Seed	Daikon	Mixed Greens	Spring Mix, Baby
Broccoli, Rabe	Dill	Mixed Greens, Baby	Sprouts
Broccolini	Eggplant	Mizuna	Squash, Summer
Brussels Sprouts	Endive	Mustard	Squash, Winter
Cabbage	Escarole	Mustard, Baby	Squash, Zucchini
Cabbage, Chinese	Fallow	Oat Hay	Strawberry (Final Harvest)
Cabbage, Green	Fennel	Onions	Strawberry (Not Final Harvest)
Cabbage, Napa	Flowers	Onions, Dry	Strawberry, 2nd Year (Final Harvest)
Cabbage, Red	Frisee	Onions, Green	Strawberry, 2nd Year (Not Final
Cabbage, Savoy	Garlic	Orach	Harvest)
Cantaloupe	Grapes, Table	Orchids	Thyme
Carrot	Grapes, Wine	Oregano	Tomatillo
Cauliflower	Jalapeno	Papaya	Tomato
Cauliflower, Seed	Kale	Parsley	Turnip
Celery	Kale, Baby	Parsnip	Watercress
Chard, Green	Kalettes	Peas	Watermelon
Chard, Red	Kohlrabi	Peas, Seed	Yam Leaf
Chard, Swiss	Leek	Peas, Snap	Zucchini
Cherry	Lettuce	Peas, Sugar	Other – Contact Water Board